

surfactant of formula (5) and at least one diamine surfactant of formula (6). Claims 4-8, 10, 12-40, 52 and 53 depend directly or indirectly from claim 3. Claims 43-47, 49, 51, 54 and 55 depend directly or indirectly from claim 42. All the pending claims have been examined only insofar as they read on an aqueous pesticidal composition comprising a surfactant composition comprising at least one elected etheramine surfactant of formula (5) and at least one elected diamine surfactant of formula (6).

In order to establish a *prima facie* case of obviousness, the prior art reference(s) must teach or suggest all the claim limitations, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings and obtain the claimed invention, and there must be a reasonable expectation of success. See MPEP §2142. Applicants respectfully submit that the Office has failed to establish a *prima facie* case of obviousness with respect to the claimed invention.

Based on the comments in the Office action, applicants understand that the continued rejection under 35 U.S.C. §103(a) relies primarily on the teaching of Wright and Griffiths. Stridde describes herbicidal compositions comprising a herbicide such as a glyphosate salt and a surfactant component comprising certain alkoxyated polyether diamines, esterfied alkoxyated polyether diamines and mixtures thereof similar to the diamines of formula (6) as defined in the pending claims. However, there is no mention in Stridde that the disclosed alkoxyated polyether diamine or esterfied alkoxyated polyether diamine surfactants are suitable for combination with a second co-surfactant as required in the cationic surfactant composition of the claimed invention. Forbes does not describe or suggest either an etheramine surfactant of formula (5) or a diamine surfactant of

formula (6), much less their combination, and is therefore even less relevant than Stridde.

Wright describes herbicidal compositions comprising glyphosate or a salt thereof and certain etheramine surfactants, including alkoxyated tertiary etheramines, alkoxyated or non-alkoxyated quaternary etheramines and alkoxyated etheramine oxides. Some of the specific etheramine surfactants disclosed by Wright fall within formula (5) as defined in the pending claims. Wright broadly teaches that a second surfactant of a class other than etheramines such as certain **nonionic** surfactants, including primary alcohol ethoxylates, secondary alcohol ethoxylates, alkyl esters of sucrose or sorbitan or alkyl polyglucosides ("APG") can be included (See, col. 8 lines 35-41; Example 12, col. 12, lines 31-33; and Example 17, col. 15, line 67 to col. 16, line 2). However, Wright does not teach or suggest a cationic surfactant composition comprising the combination of the disclosed etheramine surfactants of formula (5) and an amine co-surfactant, much less a diamine surfactant of formula (6) as called for in the pending claims.

Griffiths describes herbicidal compositions comprising glyphosate or a salt thereof and a surfactant component comprising certain diamine surfactants, specifically alkyldiamine tetraalkoxylate surfactants. The object of Griffiths invention is to provide herbicidal compositions said to exhibit low aquatic toxicity while exhibiting comparable activity as compared to an equivalent composition comprising an ethoxylated tallowamine surfactant, which is said to have significant aquatic toxicity (See, for example, col. 1, lines 31-47). Some of the most preferred ethylene diamine alkoxyates of formula (IV) disclosed by Griffiths fall within formula (6) as defined in the pending claims. Griffiths teaches that additional surfactants can be included, **provided they have low aquatic toxicity** and do not reduce the efficacy of the herbicidal composition below

acceptable levels (See, col. 6, lines 39-43). Specifically, Griffiths teaches a **nonionic** APG co-surfactant improves the compatibility of diamine surfactants with the glyphosate and provides a herbicidal composition said to have an activity comparable to a glyphosate composition comprising the standard ethoxylated tallowamine surfactant (See, col. 4, line 66 to col. 5, line 19). Griffiths does not teach or suggest a cationic surfactant composition comprising the combination of the disclosed alkyldiamine tetraalkoxylate surfactants of formula (6) with an etheramine of formula (5) as called for in the pending claims.

Applicants maintain that Wright, Griffiths and the other cited references, either individually or in combination, do not teach or suggest the desirability of, nor motivate one skilled in the art to obtain the claimed invention including a cationic surfactant composition comprising a first surfactant selected from a Markush group including the elected etheramine of formula (5), and a second surfactant selected from a Markush group including the elected diamine of formula (6).

Contrary to the assertion on page 4 of the Office action, applicants respectfully submit that based on the teaching in Wright of a glyphosate composition including the combination of an etheramine surfactant + an APG surfactant, and the teaching in Griffiths of a glyphosate composition including the combination of a diamine surfactant + an APG surfactant, it does not logically follow that one of ordinary skill in the art would therefore surmise that the combination of an etheramine surfactant and a diamine surfactant would be useful as well. The teaching of Wright is only that the disclosed etheramine surfactants are suitable for combination with certain nonionic surfactants such as an APG. Likewise, the teaching of Griffiths is only that the disclosed alkyldiamine tetraalkoxylate surfactants can be combined with an APG surfactant and not

undermine the desired low aquatic toxicity of the composition. Nothing in either Wright or Griffiths would motivate one skilled in the art to eliminate the APG surfactant common to both of the disclosed combinations and instead combine the etheramine of Wright with the alkyldiamine tetraalkoxylate surfactant of Griffiths and arrive at the claimed cationic surfactant composition. That combination is simply not taught or suggested by these references. The fact that an APG is present in both the combination taught by Wright and the combination taught by Griffiths does teach or suggest the desirability or compatibility of a combination of an etheramine surfactant of formula (5) and a diamine surfactant of formula (6).

Although Wright teaches that the disclosed etheramine surfactants can be combined with a second surfactant "of a class other than etheramines," applicants submit that such a general teaching encompasses innumerable possible co-surfactant species from any of the various surfactants known in the art, and could not reasonably be said to motivate or direct one skilled in the art to select from all the myriad of possibilities a second surfactant such as a diamine surfactant of formula (6) as called for in the pending claims with any expectation of success. Among the innumerable surfactants described in the art for use in pesticidal compositions, Wright offers no guidance whatsoever that would have directed one skilled in the art to select diamine surfactants of formula (6) for combination with the etheramine surfactants of formula (5). In fact, the only specific examples of a second surfactant "of a class other than etheramines" disclosed by Wright would have led one skilled in the art away from the claimed invention by combining the disclosed etheramine surfactant with a primary alcohol ethoxylate, a secondary alcohol ethoxylate, an alkyl ester of sucrose or sorbitan or an alkyl polyglucoside.

Griffiths does not overcome the deficiencies of Wright and in fact expressly teaches away from the combination with Wright proposed in the Office action. As noted above, to the extent that a surfactant in addition to the disclosed alkyldiamine tetraalkoxylate surfactant is included in the herbicidal composition, Griffiths teaches that such additional surfactant must have a low aquatic toxicity, such as an APG surfactant. Griffiths expressly teaches that tallow amine ethoxylates are not suitable surfactants for use in the disclosed invention because they exhibit high aquatic toxicity. One skilled in the art would readily determine that the aquatic toxicity exhibited by alkoxyated etheramine surfactants of the type defined in formula (5) and taught in Wright is comparable to that of the commonly used ethoxylated tallowamine surfactants cited in Griffiths as having significant aquatic toxicity. For example, attached are

\* Material Data Safety Sheets ("MSDS") for TOMAH E-17-2 (an alkoxyated etheramine surfactant of the type defined in formula (5)) and ETHOMEEN T/25 (an ethoxylated tallow amine surfactant). Consistent with the assertion in Griffiths, ETHOMEEN T/25 is rated as toxic to aquatic organisms (see the ETHOMEEN T/25 MSDS at page 1, Hazards Identification, and page 3, Ecological Information). Similarly, TOMAH E-17-2 is rated as very toxic to aquatic organisms (see the TOMAH E-17-2 MSDS at page 6, Regulatory Information). A person skilled in the art, upon reading Griffiths and its stated object of providing a composition exhibiting low aquatic toxicity, would therefore not in any way have been motivated to combine the disclosed alkyldiamine tetraalkoxylate surfactant with an alkoxyated etheramine surfactant with any expectation of achieving the low water toxicity directive of Griffiths.

In view of the above, the invention defined in independent claims 3 and 42 is respectfully submitted as patentable over the cited references. Claims 4-8, 10, 12-40, 52 and 53, which depend

directly or indirectly from claim 3, and claims 43-47, 49, 51, 54 and 55, which depend directly or indirectly from claim 42, are likewise patentable over the cited art for the reasons stated with respect to claims 3 and 42 and by reason of the additional requirements they introduce.

#### **Conclusion**

In light of the foregoing, applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a), and solicit allowance of the pending claims. The Examiner is invited to contact the undersigned attorney should any issues remain unresolved.

The Commissioner is requested to charge any fee deficiency or credit any overpayment in connection with this letter to Deposit Account No. 19-1345.

Respectfully submitted,



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VMK/JDH/lav

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# MATERIAL SAFETY DATA SHEET



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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: E-17-2  
Product Description: Amber liquid  
Chemical Family: Ethoxylated Amine

**MANUFACTURER:**  
TOMAH Products  
1012 Terra Drive  
P. O. Box 388  
Milton, WI 53563  
Customer Service: (608) 868-6811

**24 HR. EMERGENCY TELEPHONE NUMBERS:**  
CHEMTREC (800) 424-9300  
Emergency Phone (608) 868-6811

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	wt%	CAS Registry #
Poly(oxy-1,2-ethanediyl), a,a'-(iminodi-2,1-ethanediyl)bis[w-hydroxy-, N-[3-(branched tridecyloxy)propyl] derivs.	100%	68478-96-6

### OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

Component	EXPOSURE LIMITS		Supplier
	OSHA PEL	ACGIH TLV	
Poly(oxy-1,2-ethanediyl), a,a'-(iminodi-2,1-ethanediyl)bis[w-hydroxy-, N-[3-(branched decyloxy)propyl] derivs.	None Established	None Established	

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

#### IMMEDIATE CONCERNS:

Danger!  
Causes eye burns  
Causes skin burns  
Harmful by ingestion  
May cause respiratory tract irritation

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## POTENTIAL HEALTH EFFECTS

### EYES:

Corrosive. Will cause eye burns and permanent tissue damage;

### SKIN:

Corrosive; causes permanent skin damage

### INGESTION:

Corrosive to mouth, esophagus and stomach. Moderate toxicity if ingested.

### INHALATION:

Irritating to eyes and respiratory tract in high concentrations.

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## 4. FIRST AID MEASURES

### EYES:

Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Get prompt medical attention.

### SKIN:

Immediately use soap and water to wash the affected area for at least 15 minutes. If dilute (3%) Acetic Acid solution is immediately available, use it to wash the affected area. If the skin remains greasy when touched, repeat the 3% Acetic Acid treatment followed by another soap and water washing. Avoid contact of the acid solution with eyes, genitals or open sores. Remove contaminated clothing and clean thoroughly before reuse.

Get prompt medical attention.

### INGESTION:

DO NOT induce vomiting. If individual is conscious, give milk or water to dilute stomach contents. Keep warm and quiet. Get prompt medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

### INHALATION:

Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

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## 5. FIRE FIGHTING MEASURES

Flashpoint and Method: >150°F Penskey-Marten CC

### HAZARDOUS COMBUSTION PRODUCTS:

Carbon Monoxide, Carbon Dioxide oxides of Nitrogen and ammonia may be produced.

### FIRE FIGHTING PROCEDURES:

Use water spray to cool fire exposed surfaces and to protect personnel. Isolate "fuel" supply from fire.

Use alcohol type foam, universal foam, dry chemical or water spray to extinguish fire.

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## FLAMMABLE LIMIT:

Not available

## FIRE EXPLOSION:

Low Hazard, liquid can burn upon heating to temperatures at or above the flashpoint.

"Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly re- turned to a drum reconditioner, or properly disposed of.

## SENSITIVE TO STATIC DISCHARGE:

No, but use proper grounding procedure

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## 6. ACCIDENTAL RELEASE MEASURES

### ENVIRONMENTAL PRECAUTIONS:

#### WATER SPILL:

Remove from surface by skimming or with suitable adsorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in non-confined waters.

Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

#### LAND SPILL:

Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section15) notify the National Response Center.

Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Recover by pumping or with a suitable absorbent.

Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

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## 7. HANDLING AND STORAGE

### GENERAL PROCEDURES:

Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials.

Do NOT handle or store near an open flame, heat or other sources of ignition. Protect material from direct sunlight.

It is not known if this material is a static accumulator. Therefore, use proper grounding procedures.

Do NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning.

Storage Temperature: 50°F minimum to 140.0°F maximum

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Loading Temperature: 100°F minimum to 180°F maximum  
Loading/Unloading Viscosity: 50 to 200 cst

## STORAGE PRESSURE:

Atmospheric

## ELECTROSTATIC ACCUMULATION HAZARD:

Unknown, use proper grounding procedure

## STORAGE

### MATERIALS AND COATINGS SUITABLE:

Stainless Steel

Carbon Steel

### MATERIALS AND COATINGS UNSUITABLE

Polypropylene

Polyethylene

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### ENGINEERING CONTROLS:

Ventilation should be provided to control worker exposures and prevent health risk.

### PERSONAL PROTECTION:

#### WORK HYGIENIC PRACTICES:

For open systems where contact is likely, wear long sleeves, chemical resistant gloves, and chemical goggles.

Where contact may occur, wear long sleeves and safety glasses with side shields.

Where overexposure by inhalation may occur and engineering, work practice or other means of exposure reduction are not adequate, approved respirators may be necessary.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Odor:	Ammoniacal odor
Appearance:	Amber liquid or paste
Boiling Point:	>220 F
Specific Gravity:	.939 g/ml @ 60F
Freezing Point:	20°F
Solubility in Water:	Insoluble
Viscosity:	210 cps at 68°F

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## 10. STABILITY AND REACTIVITY

STABLE: Yes  
HAZARDOUS POLYMERIZATION: No  
STABILITY:  
Not applicable  
POLYMERIZATION:  
Not applicable  
CONDITIONS TO AVOID:  
Avoid contact with strong acids and strong oxidizing agents.  
HAZARDOUS DECOMPOSITION:  
Amines, amides and volatile hydrocarbons

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## 11. TOXICOLOGICAL INFORMATION

This product is expected to have an Oral LD50 (rat) between 1000-2000 mg/kg based on data for similar products.

Ames Mutagenicity: Negative

DOT Corrosion: Primary Irritation Index = 6.1 Corrosive PG III

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## 12. ECOLOGICAL INFORMATION

### ECOTOXICOLOGICAL INFORMATION:

This product is expected to have aquatic toxicity less than 1 ppm based on testing of similar products.

### ENVIRONMENTAL FATE:

This product is expected to be considered inherently, but not readily biodegradable based on OECD protocol 302 B 35% degradation in 28 days

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## 13. DISPOSAL CONSIDERATIONS

### DISPOSAL METHOD:

Dispose of in accordance with federal, state and local regulations.

If disposed of this product would not be considered a hazardous waste.

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## 14. TRANSPORT INFORMATION

### DOT (DEPARTMENT OF TRANSPORTATION)

Proper Shipping Name: AMINES, LIQUID CORROSIVE, N.O.S.

Technical Name: Alkoxylated Amine

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Hazard Class: 8  
NA/UN Number: UN 2735  
Packing Group: III

INTERNATIONAL (I.M.O.)  
Proper Shipping Name: Amines, liquid, corrosive, n.o.s.  
Marine Pollutant: No  
ADR/RID Hazard Classification: 8

AIR (I.C.A.O.)  
Proper Shipping Name: Amines, liquid, corrosive, n.o.s.

## 15. REGULATORY INFORMATION

### UNITED STATES

#### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 Hazard Categories: Under the provisions of Title III, Sections 311/312 of the Superfund Amendments and Reauthorization Act (SARA) this product is classified into the hazards listed below:

Fire: No Pressure Generating: No Reactivity: No Acute: Yes Chronic: No

313 Reportable Ingredients: This product does not contain any ingredients reportable under Section 313.

#### CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

If this product is accidentally spilled, it is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). We recommend you contact local authorities to determine if there may be other local reporting requirements.

#### TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA Status: Components of this product are listed on the TSCA Inventory

EC Symbols (Labelling)	C Corrosive N Dangerous for the environment. R34 Causes burns
EC Risk Phrases	R22 Harmful if swallowed R50/53 Very toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment
EC Safety Phrases	S24/25 Avoid contact with skin and eyes S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S27/28 After contact with skin, take off immediately all

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contaminated clothing and wash immediately with plenty of soap and water  
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

WHIMIS: Class E Corrosive

This product is listed on the following international inventories:

US TSCA  
Canadian NDSL  
European No Longer Polymer

## STATE REGULATIONS

### PROPOSITION 65 STATEMENT:

This product contains the following levels of compounds found by the State of California to cause cancer, and/or other reproductive effects

Nickel <10 ppm  
Ethylene Oxide < 1 ppm

### PROTECTION OF STRATOSPHERIC OZONE (PURSANT TO SECTION 622 OF THE CLEAN AIR ACT AMMENDMENTS OF 1990):

Per 40 CFR Part 82, this product does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

## 16. OTHER INFORMATION

Approval date: 7.26.2005

### NFPA CODES

Fire: 1 Health: 3 Reactivity: 0

### HMIS CODES

Fire: 1 Health: 3 Reactivity: 0

### MANUFACTURER DISCLAIMER:

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the users responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

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## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY UNDERTAKING

**Trade name** **ETHOMEEN® T/25**

**Chemical description/Application** Surfactant

**Supplier** Akzo Nobel Surface Chemistry Pte Ltd  
41 Science Park Road #03-03  
The Gemini, Singapore Science Park II  
SINGAPORE 117610  
Tel: +65 6773 8488  
Fax: +65 6773 8484

**Emergency telephone** +65 63162701 x 112 (Akzo Nobel Surface Chemistry Pte Ltd)  
+31 570679211 (Akzo Nobel Chemicals, The Netherlands)

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a substance according to EU-legislation.

Substance name	EU number	CAS number	Concentration	Symbols	Risk phrases
Tallow alkylamine ethoxylate		61791-26-2	100 %	Xn ,N	R-22, 41, 51/53
<b>Other information</b>	All components are registered in EINECS (polymer). For explanation of riskphrases, see section 16.				

### 3. HAZARDS IDENTIFICATION

Harmful. Harmful if swallowed. Risk of serious damage to eyes. Dangerous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 4. FIRST AID MEASURES

<b>General</b>	Get medical attention immediately.
<b>Inhalation</b>	Not relevant.
<b>Skin</b>	Rinse with water.
<b>Eyes</b>	Immediately rinse with water for several minutes. Hold eyelids apart. Get medical attention immediately. Continue to rinse during transport.
<b>Ingestion</b>	Rinse nose, mouth and throat with water. Drink plenty of water. Obtain medical attention.

### 5. FIRE FIGHTING MEASURES

**Extinguishing media** Water spray, fog or mist, foam, powder, carbon dioxide.

<b>Special fire fighting procedures</b>	Note that fire-extinction with water may discharge substances dangerous to the environment into sewage, wells and watercourses.
<b>Unusual fire hazards</b>	Non-flammable. If involved in a fire it will support combustion.
<b>Hazardous combustion products</b>	Carbon monoxide, carbon dioxide, nitrous gases.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	For personal protection see Section 8.
<b>Environmental precautions</b>	Do not contaminate drains or water courses.
<b>Methods for cleaning up</b>	Contain spill with inert material. Absorb in vermiculite, dry sand or earth. Place in container for disposal according to local regulations.

## 7. HANDLING AND STORAGE

<b>Handling</b>	Avoid spilling, skin and eye contact.
<b>Storage</b>	No specific storage precautions noted.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Exposure limits</b>	
<b>Comments</b>	No exposure limits have been established.
<b>Engineering controls</b>	Provide eyewash station.
<b>Personal protection</b>	
<b>Hand</b>	Chemical resistant gloves required for prolonged or repeated contact.
<b>Eyes</b>	Wear tightly fitting safety goggles.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear/cloudy liquid.		
<b>Colour</b>	-		
<b>Odour</b>	-		
<b>Boiling point/range (°C)</b>	> 100	<b>Pressure (kPa)</b>	
<b>Melting point/range (°C)</b>	* 5		
<b>Flash point (°C)</b>	> 100	<b>Method</b>	
<b>Autoignition temperature (°C)</b>	> 150		
<b>Lower explosion limit (vol %)</b>	-		
<b>Upper explosion limit (vol %)</b>	-		
<b>Vapour pressure</b>	-	<b>Temperature (°C)</b>	
<b>Relative vapour density (air=1)</b>	-		
<b>Density (kg/m3)</b>	1030	<b>Temperature (°C)</b>	20



<b>Bulk density (kg/m3)</b>	-		
<b>Viscosity</b>	300 mPas	<b>Temperature (°C)</b>	20
<b>pH value</b>	-		
<b>pH value diluted solution</b>	9	<b>Conc. (%)</b>	1
<b>Solubility in water</b>	Soluble.		
<b>Solubility in other solvents</b>	Soluble in ethanol.		
<b>Other physical data</b>	* Pour point.		

(These data are typical for the product and not a specification)

## 10. STABILITY AND REACTIVITY

<b>Stability</b>	Normally stable.
<b>Hazardous decomposition products</b>	No typical hazardous decomposition products known. High temperatures generate nitrous gases.

## 11. TOXICOLOGICAL INFORMATION

### Toxicological data

#### Health effects

<b>Respiratory</b>	Not relevant.
<b>Skin</b>	Moderately irritating. May cause transient redness and pain.
<b>Eyes</b>	Severely irritating. Risk of serious damage to eye.
<b>Ingestion</b>	Moderate acute toxicity. May cause irritation to mucous membranes in mouth, throat, stomach and intestinal canal.

<b>Component</b>	<b>Tallow alkylamine ethoxylate</b>
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<b>Toxicological data</b>	LD50. oral Rat. 200-2000 mg/kg ')
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**Toxicological information** 1) The value is estimated from tests on similar products.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicological data

<b>Component</b>	<b>Tallow alkylamine ethoxylate</b>
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<b>Ecotoxicological data</b>	LC50 96 hours Oncorhynchus mykiss (fish) 1,3 mg/l
	EC50 48 hours Daphnia 1,7 mg/l
	EC50 4 hours Nitrifying bacteria 180 ppm

**Ecotoxicology** Toxic to aquatic organisms.

**Degradation** Inherently biodegradable. <70% DOC, 28 days, Modified OECD Screening Test (OECD 301E).

## 13. DISPOSAL CONSIDERATIONS

<b>Disposal methods</b>	Incineration is recommended. Dispose of in accordance with local authority requirements. Nitrous gases may be formed by incineration.
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**Waste category** Hazardous waste in accordance with the Council Directive 91/689/EEC of 12 December 1991 on hazardous waste.

#### 14. TRANSPORT INFORMATION

**Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fatty amine ethoxylate)

##### Land transport

<b>UN number</b>	3082	<b>RID-class</b>	9
<b>ADR class</b>	9	<b>RID packing group</b>	III
<b>ADR packing group</b>	III		
<b>Classification code</b>	M6		
<b>CEFIC number</b>	90GM6-III	<b>Tremcard internal code</b>	901

##### Sea transport

<b>UN number</b>	3082		
<b>IMDG class</b>	9	<b>EmS</b>	F-A, S-F
<b>IMDG packing group</b>	III	<b>Marine pollutant</b>	Yes.

##### Air transport

<b>UN number</b>	3082	<b>Subsidiary risk</b>	-
<b>IATA/ICAO class</b>	9	<b>Packing group</b>	III

#### 15. REGULATORY INFORMATION

**Substance name** Tallow alkylamine ethoxylate

##### Symbols



##### Risk phrases

R-22 Harmful if swallowed.  
 R-41 Risk of serious damage to eye.  
 R-51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

##### Safety phrases

S-26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 S-39 Wear eye/face protection.  
 S-57 Use appropriate containment to avoid environmental contamination.

##### EU directive

Safety Data Sheet according to EC-directive 2001/58/EC

#### 16. OTHER INFORMATION

This information only concerns the above mentioned product as supplied and may not be valid if used with other product(s) or in any process. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.

##### Composed by

Barbro Dihné

Chan Quee Yean

**Explanations to R-phrases in section 2**

R-22 Harmful if swallowed. R-41 Risk of serious damage to eye. R-51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Date of printing**

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